

Landscape-level Conservation Issues

Concern for the vanishing natural landscape has grown in recent years, and segments of both the public and scientific communities are seeking strategies to preserve diversity. Most efforts have been directed toward large areas such as national parks and regional preserves. On a smaller scale, tracts containing unique or outstanding natural features have been the focus of state Natural Heritage Programs and The Nature Conservancy. Preservation efforts on a local (county) basis have received little attention until recently, yet the county level is important. The county is the unit of landscape with which most people identify on a daily basis, and it is the unit of political power that makes decisions on zoning and land use that affect further development. County-level preservation is often difficult because legislation for preservation may affect property rights and limit land use.

Community support of conservation efforts is also vital for another major reason: no matter how well managed or how well protected, none of the sites can be considered completely viable on its own. For the conservation of animals in particular, attention must be given not only to the sites that support the largest populations and highest diversity, but also to the entire matrix in which they occur. As mentioned previously, animals do not simply stay put within protected areas but freely travel across boundaries that only humans can distinguish. For conservation to be effective, cooperative efforts will likewise need to cross many different property lines or jurisdictional borders.

That the sites identified in this report still possess functioning ecosystems is probably as much a reflection of the strength of the connections between them as their intrinsic features such as size, forest maturity, or lack of internal fragmentation. In a connected system of natural areas, population losses at any one site can to some degree be compensated by animals moving in from sites where reproduction has been more successful. In the most extreme cases, small isolated sites such as Bennett Place Upland Forest or the Flat River Bend Bottomland Forest may represent "population sinks" for forest songbirds or box turtles. At such sites, reproduction is rarely successful and most of the individuals found on the site probably originated from some other "source" area. More generally, even such large tracts as the Mason Farm/Morgan Creek Bottomlands—probably the source of many of the songbirds for the entire region—obtain some degree of benefit from their connections to other sites, counteracting episodes of unfavorable conditions that may not have occurred at the same time elsewhere in the region. This is undoubtedly the explanation for the continued presence of bobcats in the Morgan Creek Valley and must also account for a large degree of the high species diversity found there.

One of the central themes of this report is the increasing need for landscape-level conservation planning as advocated and documented by numerous conservation biologists. Instead of placing the emphasis on just a few high quality and relatively easily "protectable" sites, the new approach focuses on entire landscapes and large-scale ecological processes that bind together entire regions.

Durham County a plan has in place for the preservation of stream corridors. These corridors are situated and coincide with the natural wildlife corridors within the county. The effectiveness of corridors in preserving the diversity of wildlife in an area is well known. In landscapes fragmented by development, corridors connecting reserves of larger size are pathways used by many species. At their best, corridors can also function as habitats as well as runways between habitats. Natural buffers of at least 100 feet along each side of streams and provision for wildlife crossings under intersecting roads at streams will insure protection for the species that use